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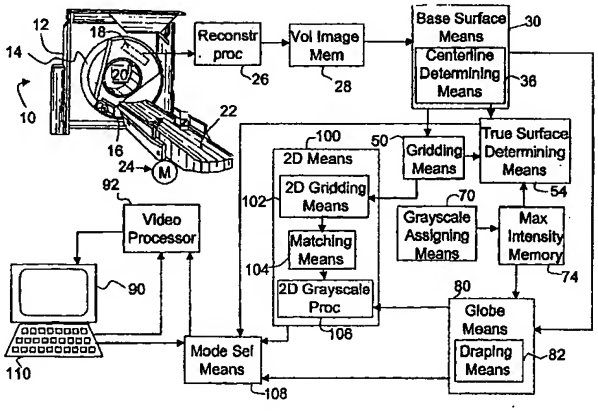
(54) Title: MAPPING THE CORONARY ARTERIES ON A SPHERE



(57) Abstract: A coronary arteries tree is approximated by a base sphere (32) which is best fitted to vessels centerlines (38). The base surface (32) is gridded to define pixels (52). The base sphere (32) is mapped to fit the centerlines (38) such that a true form surface (56) is determined. A wall thickness to the true form surface (56) is defined, preferably, by a user. A normal of each pixel (52) is searched for grayscale values of voxels. Each pixel (52) is assigned a maximum of grayscale values of voxels within the defined wall thickness intersected by the corresponding normal. The resulting true form surface is undistorted mode of visualization revealing the arteries tree in its context running on the true surface drawn through the vessels. Mapping the assigned grayscale values onto the base sphere (32) visualizes arteries tree on a globe surface (84) which might be rotatably inspected as a globe. Mapping the assigned grayscale values into a flat surface visualizes arteries tree on a two-dimensional map.

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